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U. S. Nuclear Regulatory Commission
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Washington, DC 20555

Gentlemen:

LER 272/2001-006-00
SALEM GENERATING STATION UNIT 1
FACILITY OPERATING LICENSE NO. DPR-70
DOCKET NO. 50-272

Gentlemen:

This Licensee Event Report entitled "Reactor Trip due to a Degraded Termination on Phase "A" Neutral Current Transformer Field Wiring" is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv)(A). The attached LER contains no commitments.

Sincerely,

A handwritten signature in dark ink, appearing to read "D.F. Garchow", is written over the typed name.

D. F. Garchow
Vice President - Operations

Attachment

/KMB

C Distribution
 LER File 3.7

IE22

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to: bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)

Salem Generating Station Unit 1

DOCKET NUMBER (2)

05000272

PAGE (3)

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TITLE (4)

Reactor Trip Due To A Degraded Termination On Phase "A" Neutral Current Transformer Field Wiring

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	22	2001	2001	06	00	07	20	2001	FACILITY NAME	DOCKET NUMBER
OPERATING MODE (9)		1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply) (11)							
POWER LEVEL (10)		100	20.2201(b)			20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
			20.2201(d)			20.2203(a)(4)			50.73(a)(2)(iii)	50.73(a)(2)(x)
			20.2203(a)(1)			50.36(c)(1)(i)(A)		X	50.73(a)(2)(iv)(A)	73.71(a)(4)
			20.2203(a)(2)(i)			50.36(c)(1)(ii)(A)			50.73(a)(2)(v)(A)	73.71(a)(5)
			20.2203(a)(2)(ii)			50.36(c)(2)			50.73(a)(2)(v)(B)	OTHER
			20.2203(a)(2)(iii)			50.46(a)(3)(ii)			50.73(a)(2)(v)(C)	Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)			50.73(a)(2)(i)(A)			50.73(a)(2)(v)(D)	
			20.2203(a)(2)(v)			50.73(a)(2)(i)(B)			50.73(a)(2)(vii)	
			20.2203(a)(2)(vi)			50.73(a)(2)(i)(C)			50.73(a)(2)(viii)(A)	
			20.2203(a)(3)(i)			50.73(a)(2)(ii)(A)			50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

Kennard M. Buddenbohn, Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

856-339-5653

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	EL	XCT	W120	Y					
SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).					X	NO			

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

At approximately 0616 hours on May 22, 2001, Salem Unit 1 automatically tripped from full power. The direct cause of the reactor trip was the generator lockout relay operation resulting from a main generator phase "A" differential current relay trip. Extensive troubleshooting determined that there was a degraded termination associated with the field wiring to the "A" phase main generator neutral current transformer. The affected field wiring was replaced. Follow-up testing determined the current transformer itself was also degraded. A modification was installed to rewire the protective relaying and metering circuits to alternate current transformers. The unit was returned to power operation (synchronized to the grid) on May 26, 2001.

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FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
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		2001	— 06 —	00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

PLANT AND SYSTEM IDENTIFICATION

Westinghouse – Pressurized Water Reactor

Main Generator System {EL}

Reactor Protection System {JC}

* Energy Industry Identification System (EIS) codes and component function identifier codes appear as {SS/CC}

IDENTIFICATION OF OCCURRENCE

Event Date: May 22, 2001

Discovery Date: May 22, 2001

CONDITIONS PRIOR TO OCCURRENCE

Salem Unit 1 and Salem Unit 2 were in MODE 1 (POWER OPERATION) at the time of the event.

No structures, systems, or components were inoperable at the time of the occurrence that contributed to the event.

DESCRIPTION OF OCCURRENCE

On May 22, 2001, Salem Unit 1 was operating at 100% power. At approximately 0616 hours the unit automatically tripped. All systems functioned as designed in response to the trip. A four hour notification was made to the NRC in accordance with 10 CFR 50.72(b)(2)(iv)(B) on May 22, 2001 at 0842.

The generator lockout relay operation resulted from a main generator phase "A" differential current relay trip. Extensive troubleshooting determined that there was a degraded termination associated with the field wiring to the "A" phase main generator neutral current transformer (CT) {EL/XCT}. The affected field wiring was replaced. Follow-up testing determined the CT itself was also degraded. A modification was installed to rewire the protective relaying and metering circuits to alternate CTs. The generator lockout relay operation caused the automatic actuation of the Reactor Protection System {JC}, therefore this event is being reported in accordance with 10 CFR 50.73(a)(2)(iv)(A).

The unit was returned to power operation (synchronized to the grid) on May 26, 2001.

APPARENT CAUSE OF OCCURRENCE

The direct cause of the Salem Unit 1 reactor trip was the generator lockout relay operation resulting from the actuation of the main generator phase "A" differential current relay protection. The root cause of the Salem 1 main generator phase "A" differential current relay protection actuation was most likely a degraded termination on the phase "A" neutral CT field wiring. This

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APPARENT CAUSE OF OCCURRENCE (continued)

degraded termination appears to have caused either a high resistance in the CT secondary and/or an intermittent open circuit. Either of these conditions could have caused the protective relay operation on differential current. The degraded termination is also the most likely cause of the CT degradation found through testing after the CT field wiring was replaced and the termination reconnected. The specific mechanism of CT failure cannot be confirmed since the CT was abandoned in place.

SAFETY SIGNIFICANCE AND IMPLICATIONS

There were no actual safety consequences associated with this event. All safety systems performed as designed in response to the trip.

A review of this event determined that a Safety System Functional Failure (SSFF) as defined in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, did not occur.

Based on the above, this event did not present a risk to the health and safety of the public.

PREVIOUS OCCURRENCES

A review of events over the past two years identified no reportable events due to CT or potential transformer (PT) failures at Salem Generating Station Unit 1 or 2.

CORRECTIVE ACTIONS

1. Completed the replacement of degraded field wiring and completed the isolation of the degraded CT.
2. An inspection of CT field wiring terminations on Salem 2 and Hope Creek generators will be performed. If component degradation is identified, the degraded components will be replaced.
3. A recurring task to inspect CT field wiring terminations on Salem 1 generator CTs will be established.
4. An evaluation of Salem 1 generator neutral CT field wiring to determine a more suitable product for the application and future replacement will be performed.
5. An evaluation and update of the maintenance strategy for the Salem and Hope Creek main generator CTs will be performed.

COMMITMENTS

The corrective actions cited in this LER are voluntary enhancements and do not constitute commitments.